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REPLY TO ATTENTION OF:

50604/EP-3006.02

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JUN 19 1958

REGISTERED MAIL - RETURN RECEIPT REQUESTED

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The proposal requested by [redacted] is forwarded herewith, as a task under Contract No. RD-155.

Very truly yours,

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Vice President & General Manager

JMJ/dfw

Enclosure:
Proposal dated 19 June 1958 and attachments as listed thereon (original and one copy)

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INTER-OFFICE MEMORANDUM

19 June 1958

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To: [redacted] (original and 3 copies)

From:

SUBJECT: PROPOSAL FOR CONVEYOR SYSTEM, EP-3006.01

. . . . . .

The requirements for a conveyor system described in the specification and sketch furnished (copies attached) have been reviewed and two systems for accomplishing these requirements have been developed. A proposal for designing and manufacturing each of these has been prepared.

The first approach essentially uses standard conveyor components. Standard rollers are used in the straight sections and standard 1-1/2 inch diameter ball transfer assemblies are used in the curved and transition sections. The forward end of the conveyor could be elevated several inches to facilitate transfer and/or take care of the floor being out of level. Foot operated positive brakes would be provided in the end of each 10 foot straight sections and foot operated friction brakes will be provided in the curved section. In addition a guide rail will be provided on the outside of the curved section and 18 inch guide rollers will be provided on the sides of the exit doors. The estimated total weight of the equipment that we would furnish is 1500 pounds.

It is our considered opinion that simple pallets will be required with such a system. These would be necessary in order to take care of the projecting lateral ropes on the lower surface of the boxes. This system has been discussed with manufacturers of standard conveyor and they concur in the need for pallets. If the pallets are not used considerable force will be required to push the boxes along the conveyor with the ropes climbing over the successive rollers. This system, however, does provide the advantage of straightforward conventional design using readily available components. The pallets would be very simple and inexpensive and could be made of wood.

In order to accomplish this design we will require access to information covering attachment provisions for the conveyor supports, door sills, and guide rollers. It is estimated that we can complete the design and manufacture and deliver this equipment within five weeks after authorization to proceed. Our estimate to accomplish this is as follows:

Furnish all services and material to design and manufacture one conveyor system in accordance with the specification and sketch attached hereto. This system would be constructed primarily of standard components.

Estimated Cost	$11,682.53
Fixed Fee	817.00
CPFF	$12,499.53

The above cost does not include installation services.

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Subject: Proposal for Conveyor System, EP-3006.01

We have also considered other ways of accomplishing this job. These include systems of roller trucks running on rails, a linear type ball conveyor, and a low friction system with no moving parts. Although we can provide designs for a number of such possibilities we have only prepared a proposal for the last mentioned. The system proposed would take advantage of the very low friction characteristics of teflon. The quoted coefficients of friction for teflon are in the range of .04 to .10. The best value quoted for a good standard conveyor is .04. The system proposed would essentially consist of a teflon chute. The structure would be low density plastic filled and covered with a rugged cloth such as Fiberthin. This base would permit distribution of the loaded weight of the box over a large area of the chute and the teflon covering would provide for low friction. Adequate supports to raise the chute off the floor would be provided and, in addition, a guide rail in the curved section, rollers at the door, and a sill extension would be provided.

Positive foot operated brakes in the straight sections would be provided as well as shoe brakes in the curved section. These brakes would project through the teflon covered chute when actuated. The brakes in the curved section area would be friction pads which by a combination of increased friction and physical raising of the box would slow down or stop the boxes. Although this system has not actually been constructed it appears that it should be straightforward and workable and would provide a very simple and lightweight system. Transition from the straight to curved sections would be simple and continuous. The estimated weight of this system is 450 pounds. In addition to its lightness it should be simple to stow and handle. In order to accomplish the design of this system we would require the same technical information referred to with the first system. Our estimated schedule for design and building this system is six weeks from authorization to proceed. Our estimate for accomplishing this is as follows:

Provide all necessary services and material to design and manufacture one teflon covered conveyor chute including brakes and other provisions in general accordance with the attached specification and sketch.

Estimated Cost	$14,040.68
Fixed Fee	982.00
CPFF	$15,022.68

[redacted]

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MJK/ht

Attachments: (4 copies of each)
1. Conveyor Specification
2. Sketch
3. [redacted] Cost Analysis EP-3006.01

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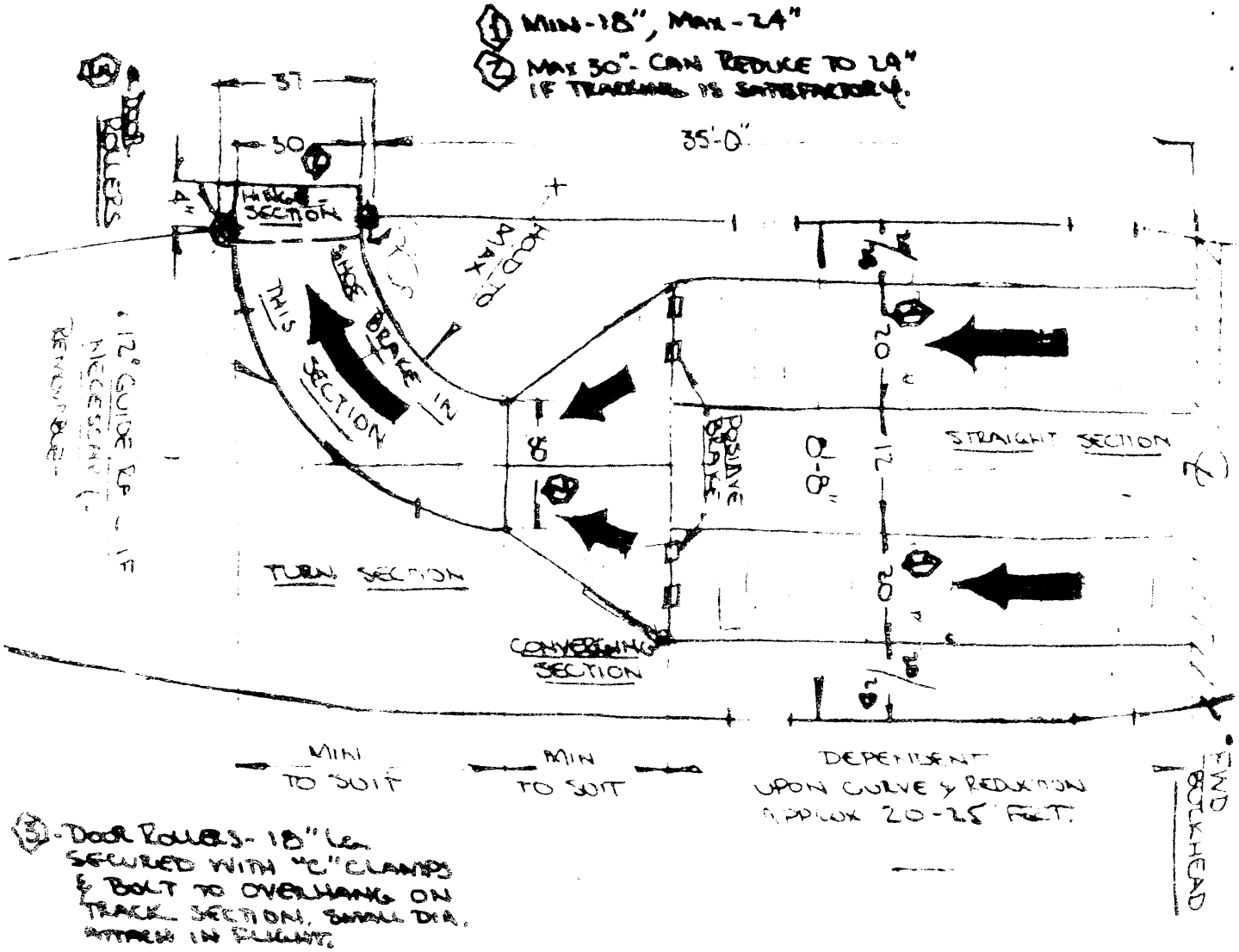
CONVEYOR SPECIFICATION

1. Light weight system - compact
2. Ease of installation in small space
3. Lubrication, -10°F to 100°F
4. Max. container - 17" wide x 8'-0" long -- 600 lb
5. Min. container - 17" wide x 44" long -- 600 lb
6. Max. height of container - 35"
7. 2 Box bundles - 250 lb/box
8. All containers are secured with 3/8 and 1/2" line
9. Desire to use no pallet if possible
10. Desire fast roll action for dispatching
11. Max. section length 10'-0"
12. Require positive brake at beginning of each 10' section
13. All brakes foot operated with lock down and quick release
14. Shoe brake at door section
15. Solid roller vs skate roller which is best system - will sacrifice in weight to get best performance
16. What is best arrangement of rollers, spacing, dia. (small vs large)
17. 1/2" line at rt. angles and parallel to rollers - largest group 2 strands 1/2 & 1 strand 3/8"
18. Hold system as close to floor as possible

20. Desire vertical door rollers per sketch
21. May elevate fwd. roller section

19 June 1958



(5) - DOOR ROLLERS - 18" Lg. SECURED WITH "C" CLAMPS & BOLT TO OVERHANG ON TRACK SECTION. SMALL DIA. MATERIAL IN ELEMENT.

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TITLE Conveyor System Sheet 1

COST ANALYSIS EP 3006.01 A & 3006.01 B of 1

[redacted] COCKEYSVILLE, MARYLAND

ITEM NO. DESCR.	A Conveyor & Pallet		B Slide Type Conveyor					
COST ELEMENT	HRS. & RATE	DOLLARS	HRS. & RATE	DOLLARS	HRS. & RATE	DOLLARS	HRS. & RATE	DOLLARS
Engineering Labor	Hrs. 880 Rate 3.46	3044.80	Hrs. 1500 Rate 3.15	4,725.00	Hrs. Rate		Hrs. Rate	
Engineering Overhead	Rate 80%	2435.84	Rate 80%	3,780.00	Rate %		Rate %	
Manufacturing Labor	Hrs. 480 Rate 2.31	1108.80	Hrs. 466 Rate 2.31	1076.46	Hrs. Rate		Hrs. Rate	
Manufacturing Overhead	Rate 105%	1164.24	Rate 105%	1130.28	Rate %		Rate %	
Tool Labor	Hrs. 50 Rate 2.45	122.50	Hrs. 50 Rate 2.45	122.50	Hrs. Rate		Hrs. Rate	
Tool Overhead	Rate 105%	128.62	Rate 105%	128.62	Rate %		Rate %	
Tool Material		100.00		75.00				
Subcontract								
Material & Purch. Parts		2070.00		1261.40				
Direct Charges		350.00		350.00				
Cost Excluding G&A		10,524.80		12649.26				
G & A	11 %	1,157.73	11 %	1391.42	%		%	
Total Estimated Cost		11,682.53		14040.68				
Profit or F F	%	817.00	%	982.00	%		%	
Selling Price or CPFF		12499.53		15022.68				
Unit Price								
Extended Price or CPFF								

Submitted to _____ Prepared by [redacted] Date 6-18-58

Customer's Prop. Ref. _____ Checked by _____ Date 6-18-58

25X1 [redacted] Letter _____ Approved by _____ Date _____

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